

Grizzly *Industrial, Inc.*®

MODEL T23108 CHAIN SAW SHARPENER OWNER'S MANUAL



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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**
FOR MODELS MANUFACTURED SINCE 7/10 #TS13269 PRINTED IN CHINA

 **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

 **WARNING!**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Manual Accuracy

We are proud to offer this manual with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, check our website for the latest manual update or call technical support for help.

Before calling, find the manufacture date of your machine by looking at the date stamped into the machine ID label (see below). This will help us determine if the manual version you received matches the manufacture date of your machine.

		MODEL GXXXX MACHINE NAME	
SPECIFICATIONS		WARNING!	
Motor:		Manufacture Date of Your Machine When using this machine: 1. Always wear eye protection, ear protection, and a respirator. 2. Read and understand the instructions before starting. 3. Do not drink alcohol or use drugs before operating the machine. 4. Make sure the motor has stopped and disconnect power before adjustments, maintenance, or service. 5. DO NOT expose to rain or dampness. 6. DO NOT modify this machine in any way. 7. DO NOT remove safety guards. 8. Never leave machine running unattended. 9. DO NOT operate under the influence of drugs or alcohol. 10. Maintain machine carefully to prevent accidents.	
Specification:			
Specification:			
Specification:			
Weight:			
<input type="text"/>	Date		
<input type="text"/>	Serial Number		
Manufactured for Grizzly in Taiwan			

For your convenience, we post all available manuals and manual updates for free on our website at www.grizzly.com. Any updates to your model of machine will be reflected in these documents as soon as they are complete.

Contact Info

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
E-Mail: techsupport@grizzly.com

We want your feedback on this manual. If you can take the time, please email or write to us at the address below and tell us how we did:

Grizzly Industrial, Inc.
c/o Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Machine Description

The Model T23108 Chain Saw Sharpener quickly and accurately sharpens the cutter links of hand-held chain saws.

Once the sharpener is properly set up for the chain specifications, the three critical angles of the cutter link are sharpened with one downward movement of the spinning grinding wheel. The next cutter link is quickly and precisely moved into the correct position for sharpening with the aid of the adjustable advancement guide. This procedure ensures that all cutter links of the chain are sharpened to the same specifications.



Identification

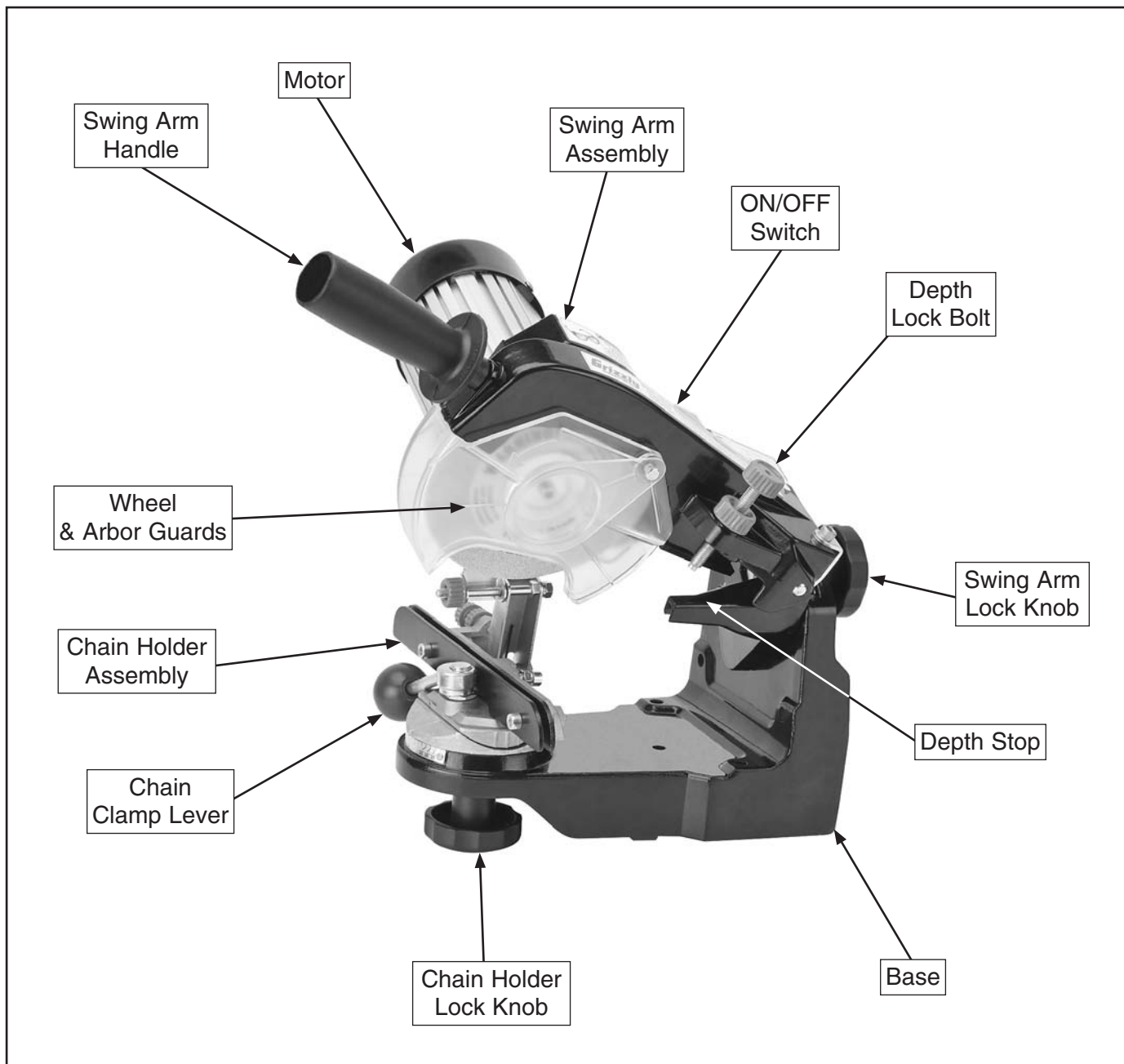
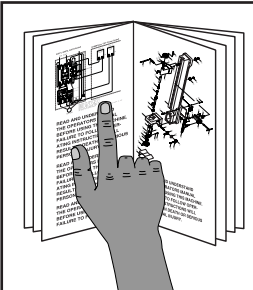


Figure 1. Model T23108 identification.

	<p>⚠ WARNING To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.</p>
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SECTION 1: SAFETY


WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

 **DANGER** Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

 **WARNING** Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

 **CAUTION** Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE This symbol is used to alert the user to useful information about proper operation of the machine.

WARNING

Safety Instructions for Machinery

OWNER'S MANUAL. Read and understand this owner's manual **BEFORE** using machine. Untrained users can be seriously hurt.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

HAZARDOUS DUST. Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and always wear a NIOSH-approved respirator to reduce your risk.

WEARING PROPER APPAREL. Do not wear clothing, apparel, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips which could cause a loss of workpiece control.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

MENTAL ALERTNESS. Be mentally alert when running machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.



WARNING

DISCONNECTING POWER SUPPLY. Always disconnect machine from power supply before servicing, adjusting, or changing cutting tools (bits, blades, cutters, etc.). Make sure switch is in OFF position before reconnecting to avoid an unexpected or unintentional start.

APPROVED OPERATION. Untrained operators can be seriously hurt by machinery. Only allow trained or properly supervised people to use machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in wet or rainy locations, cluttered areas, around flammables, or in poorly-lit areas. Keep work area clean, dry, and well-lighted to minimize risk of injury.

ONLY USE AS INTENDED. Only use machine for its intended purpose. Never modify or alter machine for a purpose not intended by the manufacturer or serious injury may result!

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

CHILDREN & BYSTANDERS. Keep children and bystanders a safe distance away from work area. Stop using machine if children or bystanders become a distraction.

REMOVE ADJUSTING TOOLS. Never leave adjustment tools, chuck keys, wrenches, etc. in or on machine—especially near moving parts. Verify removal before starting!

SECURING WORKPIECE. When required, use clamps or vises to secure workpiece. A secured workpiece protects hands and frees both of them to operate the machine.

FEED DIRECTION. Unless otherwise noted, feed work against the rotation of blades or cutters. Feeding in the same direction of rotation may pull your hand into the cut.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

GUARDS & COVERS. Guards and covers can protect you from accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly before using machine.

NEVER STAND ON MACHINE. Serious injury or accidental contact with cutting tool may occur if machine is tipped. Machine may be damaged.

STABLE MACHINE. Unexpected movement during operations greatly increases the risk of injury and loss of control. Verify machines are stable/secure and mobile bases (if used) are locked before starting.

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

UNATTENDED OPERATION. Never leave machine running while unattended. Turn machine **OFF** and ensure all moving parts completely stop before walking away.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. An improperly maintained machine may increase the risk of serious injury.

CHECK DAMAGED PARTS. Regularly inspect machine for damaged parts, loose bolts, mis-adjusted or mis-aligned parts, binding, or any other conditions that may affect safe operation. Always repair or replace damaged or mis-adjusted parts before operating machine.

EXPERIENCING DIFFICULTIES. If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact our Technical Support Department at (570) 546-9663.



WARNING

Additional Safety for Chain Saw Sharpeners

READ AND FOLLOW all safety instructions in the chain saw owner's manual.

CHAIN INSPECTION. Always visually inspect each chain component for severe wear or damage before sharpening or re-installing it on the chain saw. If in doubt, do not sharpen or use the chain until the parts or the chain can be replaced.

PERSONAL PROTECTIVE GEAR. Always wear leather gloves when handling the chain. To protect yourself from flying particles, put on safety glasses and respirator before beginning the sharpening operation.

GRINDING WHEEL INSPECTION. To avoid the grinding wheel breaking apart during operation, always inspect it and perform the ring test before using. If in doubt as to the condition of the wheel, DO NOT use it!

TOP PLATE LENGTH. If the length of the cutter top plate from the leading edge to the rear of the cutter link is less than ¼" after sharpening, there is a high risk that this link will break during the cutting operation. Always inspect the cutter after sharpening and replace it or the chain if in doubt.

CHAIN SPECIFICATIONS. If the chain is incorrectly sharpened, the links could break during use and send flying debris at the operator or bystanders. Always make sure the sharpener setup agrees with the chain manufacturer's specifications.

VOLATILE/FLAMMABLE MATERIALS. The grinding wheel produces sparks when sharpening the chain that could cause volatile materials to catch fire or explode. Never use flammable materials to clean the chain (such as gasoline, kerosene, or mineral spirits) and never operate the sharpener near volatile or flammable materials.

WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

CAUTION

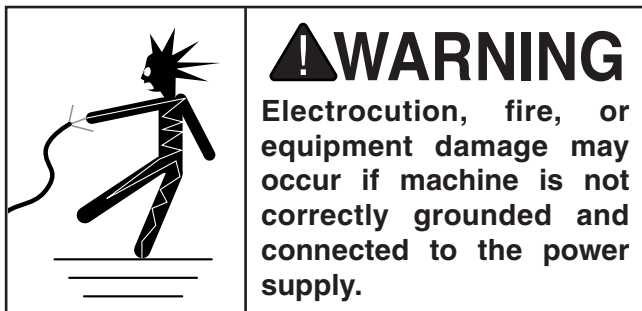
No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.



SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by a qualified electrician in accordance with all applicable codes and standards.



Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 110V..... 2 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

Circuit Requirements

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 110V/120V
Cycle 60 Hz
Phase Single-Phase
Circuit Size 15 Amps

A power supply circuit includes all electrical equipment between the main breaker box or fuse panel in your building and the incoming power connections inside the machine. This circuit must be safely sized to handle the full-load current that may be drawn from the machine for an extended period of time.



Note: *The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.*



Grounding & Plug Requirements

In the event of certain types of malfunctions or breakdowns, grounding provides a path of least resistance for electric current—in order to reduce the risk of electric shock.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (similar to the figure below). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

⚠ WARNING
Serious injury could occur if you connect the machine to power before completing the setup process. **DO NOT** connect to power until instructed later in this manual.

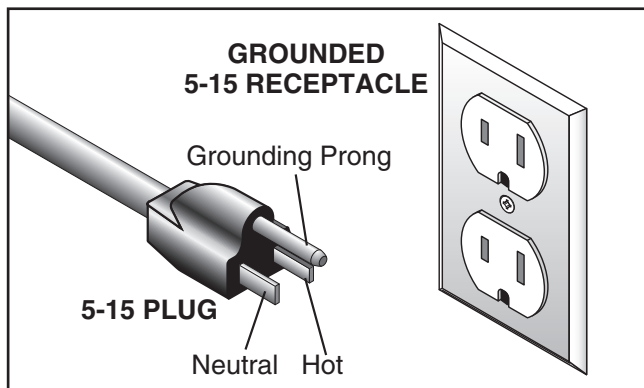
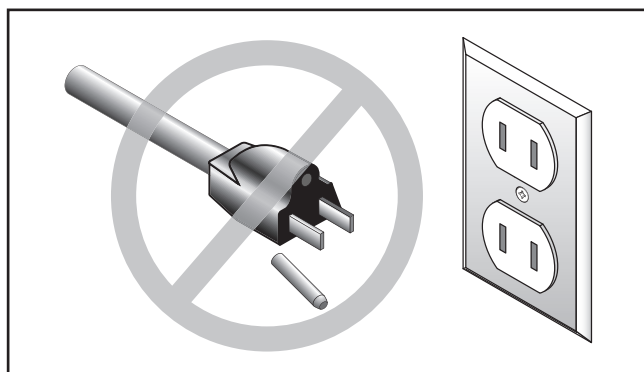


Figure 2. Typical 5-15 plug and receptacle.



⚠ CAUTION
DO NOT modify the provided plug or use an adapter if the plug will not fit your receptacle. Instead, have a qualified electrician install the proper receptacle on a power supply circuit that is grounded and meets the requirements for this machine.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

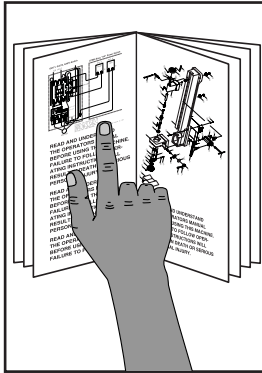
Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

Minimum Gauge Size 14 AWG
Maximum Length (Shorter is Better).....50 ft.



SECTION 3: SETUP



!WARNING
This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!



!WARNING
Wear safety glasses during the entire setup process!



!WARNING
SUFFOCATION HAZARD!
Keep children and pets away from plastic bags or packing materials unpacked with this machine. Discard immediately.

Needed for Setup

The following are needed to complete the setup process, but are not included with your machine.

Description	Qty
• Safety Glasses	1
• Mounting Hardware	As Needed

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.



Inventory

The following is a description of the main components shipped with your machine. Lay the components out to inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

Inventory: (Figure 3)	Qty
A. Swing Arm Handle	1
B. Combo Wrench 8mm	1
C. Combo Wrench 8 x 10mm	1
D. Base & Chain Holder Assembly	1
E. Hex Wrench 4, 5mm.....	1 Each
F. Chain Gauge	1
G. Wheel Dressing Block	1
H. Motor & Swing Arm w/Wheel 1/4" Thick	1
I. Fender Washer 10mm.....	1
J. Hex Bolt M10-1.5 x 40	1
K. Swing Arm Lock Knob.....	1
L. Grinding Wheel 3/16" Thick	1
M. Grinding Wheel 1/8" Thick	1

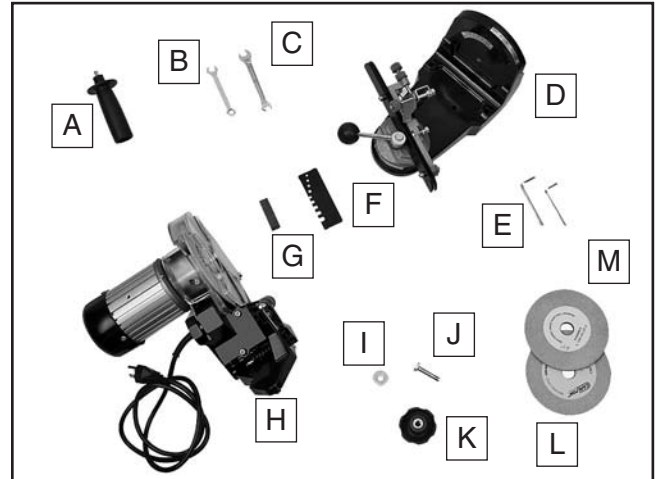


Figure 3. T23108 shipping inventory.

NOTICE

If you cannot find an item on this list, check the mounting location on the machine or the packaging materials. Sometimes parts are pre-installed for shipping, or they become hidden by packaging materials.



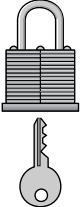
Site Considerations

Weight Load

Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**

	<p>⚠ CAUTION Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.</p>
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Physical Environment

The physical environment where your machine is operated is important for safe operation and the longevity of its components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging a lockout/tagout device.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

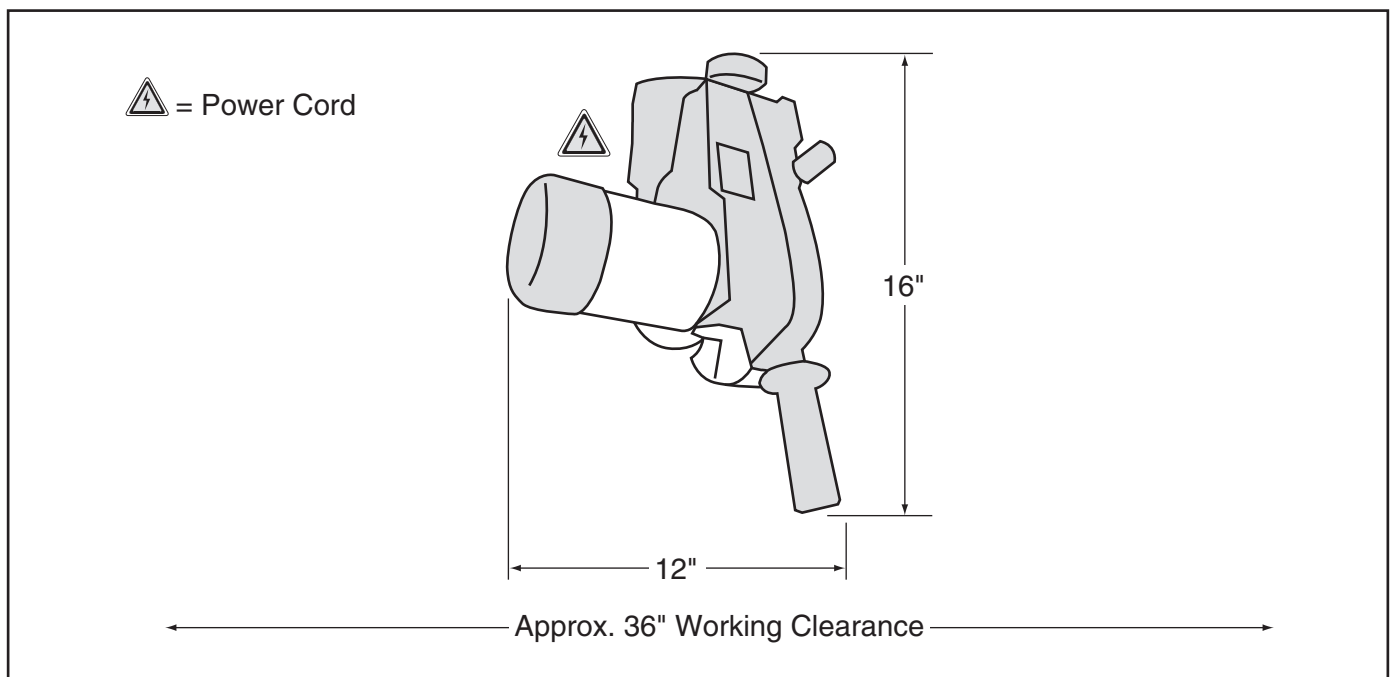


Figure 4. Minimum working clearances.



Mounting

The base of this machine has holes for mounting it to a workbench. Because of the forces applied to the machine during operation, you **MUST** firmly mount it to a workbench to prevent it from tipping or shifting during operation. An unexpected movement could result in injury or property damage.

Place the base flat on the workbench, slide it back until the stop flanges (see **Figure 5**) are against the front of the workbench. Mounting the sharpener in this manner will allow the necessary access to the chain holder lock knob.

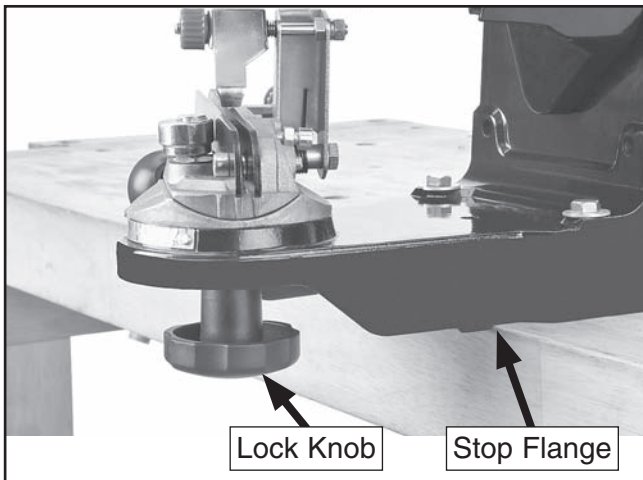


Figure 5. Stop flange against the workbench.

The strongest mounting option is a "Through Mount" where holes are drilled all the way through the workbench, then hex bolts, washers, and hex nuts are used to secure the sharpener to the workbench.

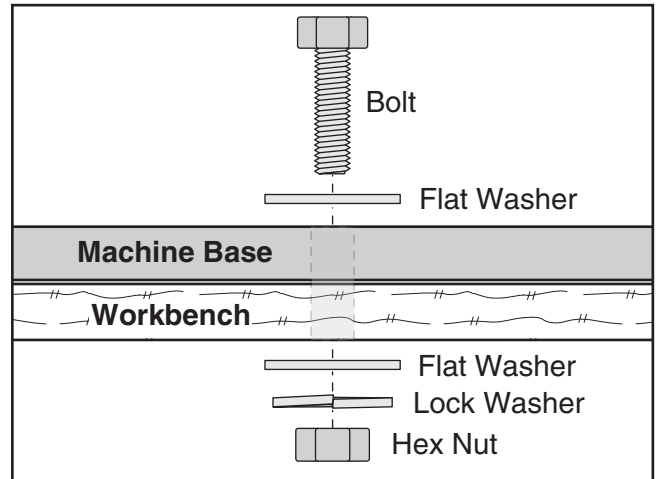


Figure 6. Example of a through mount setup.

Another option for mounting is a "Direct Mount" where the machine is simply secured to the workbench with a lag screw and flat washer.

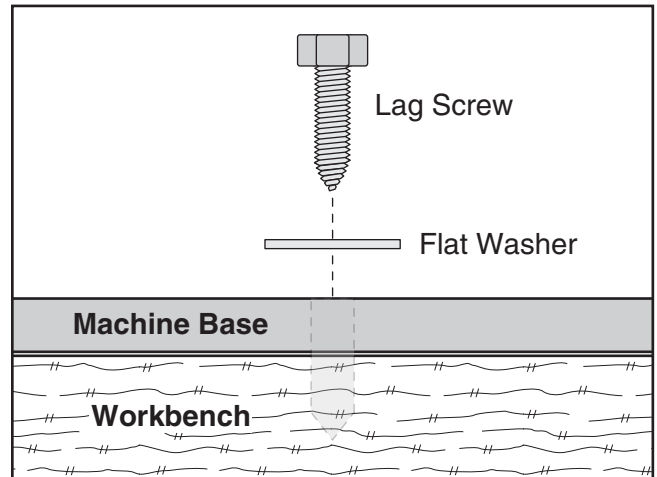


Figure 7. Example of a direct mount setup.

NOTICE

There are mounting holes in the vertical face of the base that can be used to mount the sharpener to a wall. If you choose this mounting position, make sure there is enough room between the wall and the swing arm lock knob so that you can use the knob to change the angle of the grinding wheel.



Assembly

The Model T23108 is shipped partially assembled. Perform the following procedure to complete the assembly.

To assemble the sharpener:

1. Make sure the base is firmly mounted to the workbench.
2. Insert the swing arm pivot stud into the matching hole in the vertical face of the base (see **Figure 8**).

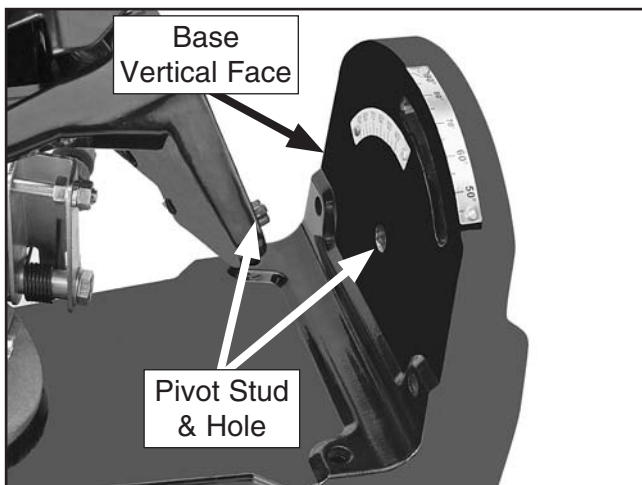


Figure 8. Swing arm pivot stud and matching hole.

3. While holding the swing arm in place, insert the M10-1.5 x 40 hex bolt through the hex-shaped hole in the swing arm vertical face, then secure the arm to the base with the 10mm fender washer and M10-1.5 lock knob, as shown in **Figures 9–10**.

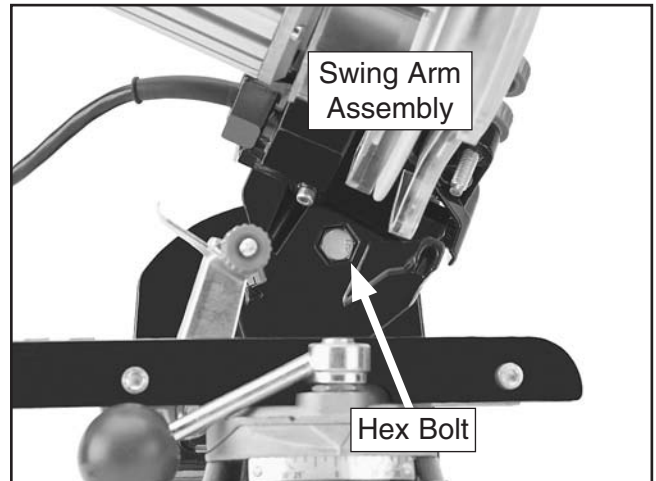


Figure 9. Swing arm hex bolt inserted.

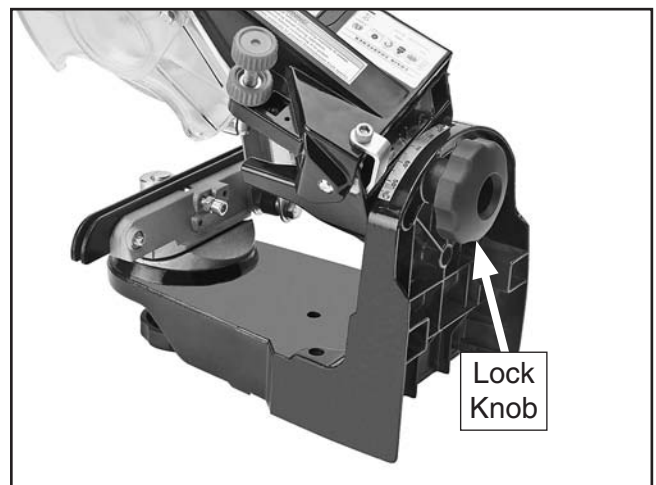


Figure 10. Swing arm lock knob installed.

4. Thread the handle onto the end of the swing arm, as shown in **Figure 11**.

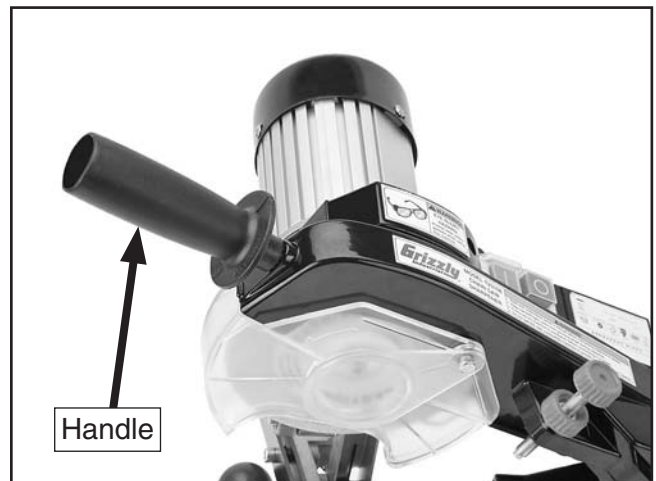


Figure 11. Swing arm handle attached.



Installing Grinding Wheel

To install the grinding wheel:

1. DISCONNECT MACHINE FROM POWER!
2. Select the correct grinding wheel for your chain (refer to **Grinding Wheel Selection** on **Page 20** for detailed information).
3. Perform the **Wheel Inspection & Ring Test** procedure as instructed on **Page 21**. If the wheel does not pass visual inspection or the ring test—DO NOT use it!
4. If necessary, dress the wheel (refer to **Dressing Grinding Wheel** on **Page 29** for detailed information).
5. If installed, remove the arbor and wheel safety guards, as shown in **Figure 12**, by unthreading the two hex bolts that secure them.

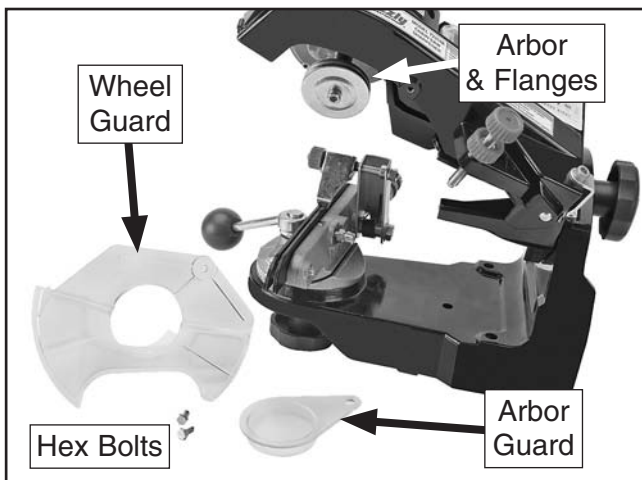


Figure 12. Safety guards removed.

6. Remove the arbor cap screw and outer flange, then place the grinding wheel on the inner flange.
7. Replace the outer flange and arbor cap screw, then tighten the cap screw to approximately 60 inch pounds.

⚠ WARNING

Over-tightening the arbor cap screw could cause the grinding wheel to crack and break apart during operation, which would send flying debris at the operator. DO NOT over-tighten the arbor cap screw. If possible, use a torque wrench to ensure that the cap screw is not tightened more than 60 inch pounds.

8. Replace the wheel and arbor safety guards (see **Figure 13**).



Figure 13. Grinding wheel and safety guards installed.

⚠ WARNING

During operation, sparks and debris are thrown from the wheel and chain. To reduce the risk of operator injury from this material, ALWAYS make sure the wheel and arbor safety guards are correctly installed before connecting the sharpener to power!



Power Connection

Before the machine can be connected to the power source, an electrical circuit and connection device must be prepared per the **POWER SUPPLY** section in this manual, and all previous setup instructions in this manual must be complete to ensure that the machine has been assembled and installed properly.

Always make sure the OFF ("O") button is pushed in before connecting the sharpener to power.

Insert the machine power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

If you need to disconnect the machine from power later, pull the plug completely out of the receptacle.

Test Run

Once assembly is complete and the sharpener is firmly mounted to a workbench, test run the machine to make sure it runs properly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the **Troubleshooting on Page 30**.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

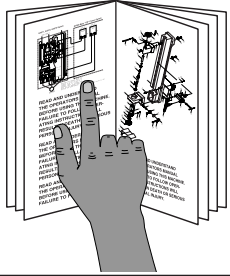
To test run the machine:

1. Make sure you have read the safety instructions at the beginning of the manual and that the machine is setup properly.
2. Make sure all tools and objects used during setup are cleared away from the machine.
3. Turn the machine **ON** (push the "I" button).
4. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

—Strange or unusual noises should be investigated and corrected before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.
5. Turn the machine **OFF** (push the "O" button).

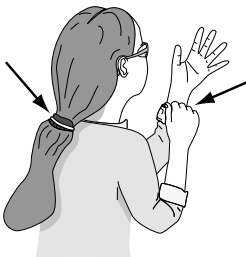
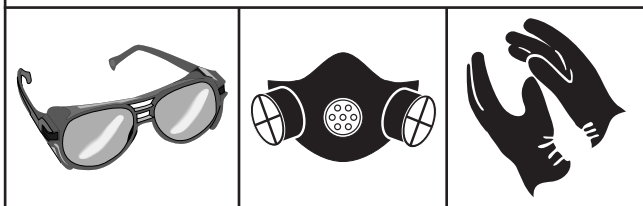


SECTION 4: OPERATIONS



⚠️ WARNING
To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠️ WARNING
Damage to your eyes, lungs, and hands could result from using this machine without proper protective gear. Always wear safety glasses, a respirator, and leather gloves when operating this machine.



⚠️ WARNING
Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.

NOTICE
If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, review industry trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Chain Saw Terminology

Refer to the following descriptions and illustrations to better understand the chain saw terminology used in this manual.

Chain Component Identification: The cutter links illustrated in **Figure 14** do the actual cutting, while the lower tangs of the drive links keep the chain riding in the guide bar.

The plain ties connect the links together as they move and pivot on the rivets.

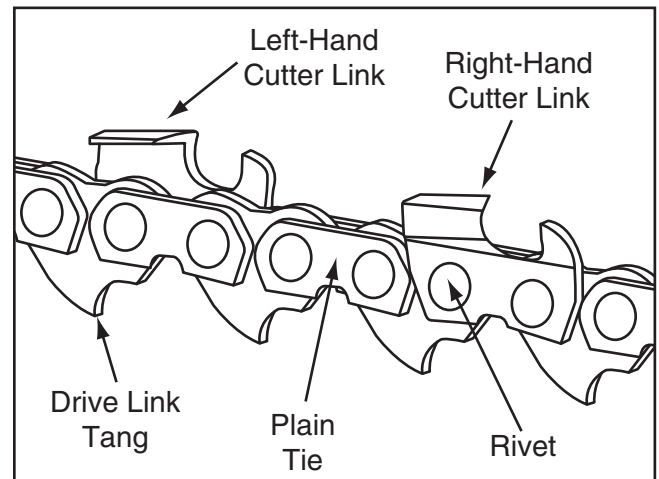


Figure 14. Chain component identification.



Chain Pitch: The distance between any three consecutive rivet centers divided by 2 is known as the chain pitch (see **Figure 15**).

The chain pitch is the same for all links in the chain. The smallest chain pitch for handheld chain saws is $\frac{1}{4}$ ", with $\frac{3}{8}$ " and 0.325" being the most popular.

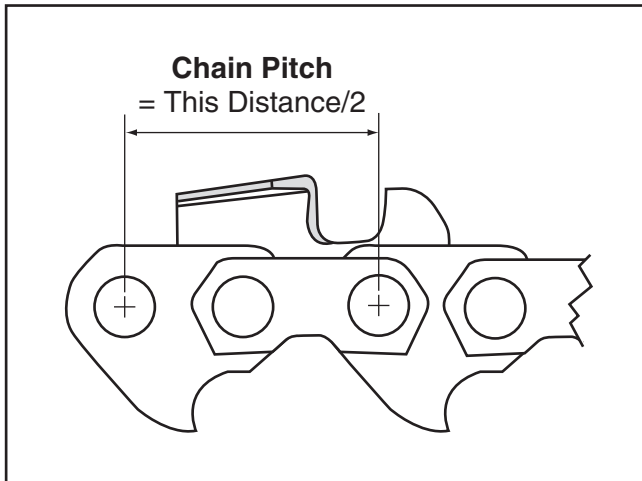


Figure 15. Chain pitch.

Chain Gauge: The chain gauge is the thickness of the drive link tang (see **Figure 16**) where it fits into the guide bar groove. The guide bar groove must match the width of the chain gauge.

Chain gauges for handheld chain saws range from 0.050" for smaller chains to 0.122" for larger ones.

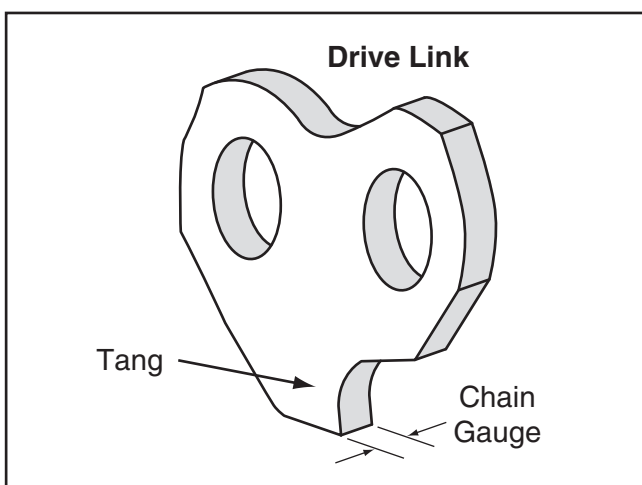


Figure 16. Chain gauge.

Top Plate Angle: The profile of the cutter link is shaped like a number "7", and is comprised of the top plate and side plate (see **Figure 17**). The rake that the top plate angles back from the side plate is called the top plate angle and is generally 25° – 35° . This makes a sharp point that begins the cut.

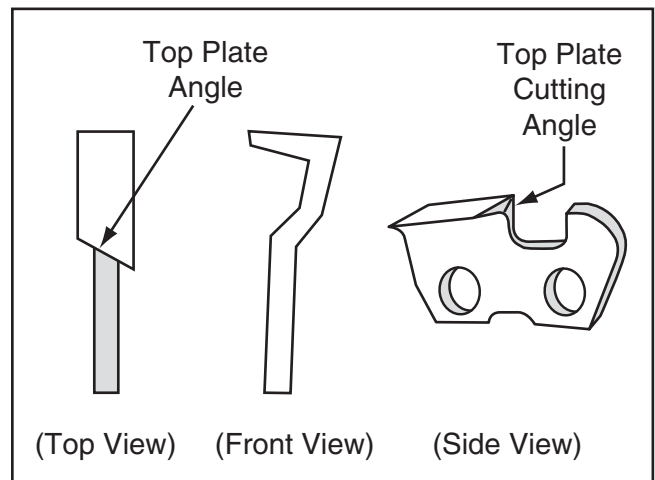


Figure 17. Cutter link top plate angle and cutting angle.

Top Plate Cutting Angle: The top plate cutting angle (see **Figure 17**) is a chisel-like downward bevel on the underside leading edge of the top plate that usually is 60° . The combination of this cutting angle and the top plate angle serves to remove wood chips from the kerf.

Side Plate Angle: The ground angle of the side plate leading edge is instrumental in forming the cutting point between the side and top plates. This angle is the same as the top plate cutting angle, which is typically 60° (see **Figure 18**).

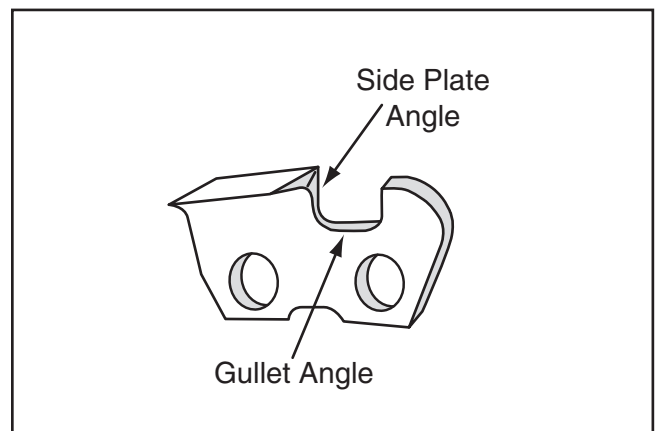


Figure 18. Cutter link side plate angle, gullet, and depth gauge.



Gullet Angle: The cutter gullet (see **Figure 18**) provides a space for the wood chips so they can be removed by the top plate. On some chains, it is necessary to have a 10° downward bevel on the bottom of the gullet that forces the chips into the path of the top plate for removal.

Depth Gauge: The depth gauge (see **Figure 19**) is a critical element of the cutter link and is often overlooked in chain saw sharpening. The height of the depth gauge must be below the leading edge of the top plate by the correct amount for your chain saw. Refer to **How the Chain Cuts** in the next section and **Depth Gauge Setting** on **Page 28** to better understand the purpose of the depth gauge.

After sharpening the cutter, always remember to check, and if necessary, adjust the depth gauge setting.

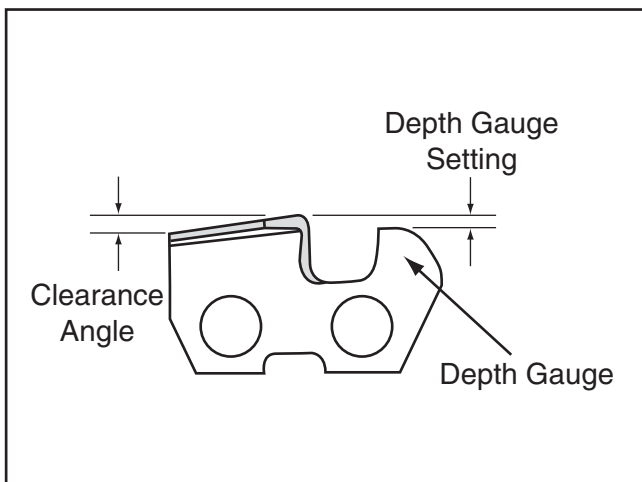


Figure 19. Clearance angle and depth gauge setting.

Clearance Angle: The clearance angle (see **Figure 19**) is the amount that the top plate angles down from the leading edge to the rear of the cutter link. This clearance angle allows the cutter link to pivot up into the wood and then down again (refer to **How the Chain Cuts** in the next section for more information).

Left- & Right-Hand Cutters: Chain saws have left- and right-hand cutter links that together make the cut. The sharpener must be set up differently when sharpening left- and right-hand cutters (see **Figure 20**) because the angles on the cutters are reversed. It is important to clearly identify the orientation of the cutter before sharpening it.

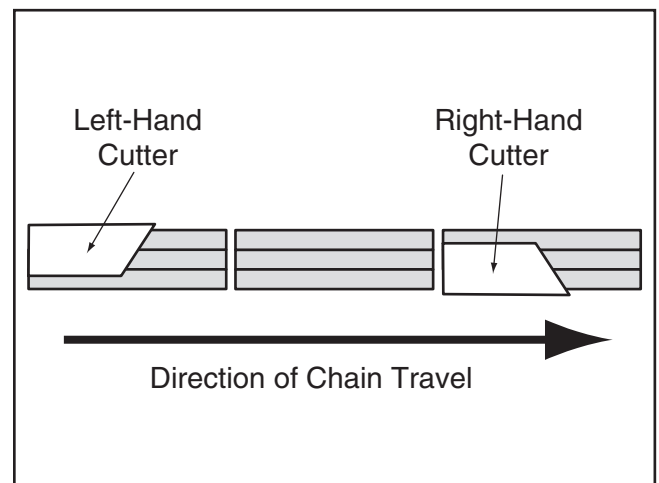


Figure 20. Identification of left- and right-hand cutters.



How the Chain Cuts

As illustrated in **Figure 21** below, when the cutting point at the top of the cutter moves against the wood ("**1**"), the front of the cutter pivots up until the depth gauge meets the wood ("**2**"), which forces the cutter to pivot even farther into the wood ("**3**") to make the cut.

When the rear of the top plate meets the wood ("**4**"), it forces the cutter to continue pivoting forward and move out of the kerf, producing wood chips which are carried away by the top plate angle in the final position ("**5**") to complete the cut.

The goal of this rocking motion is to allow the chain saw to self-feed into the wood and do the work without requiring the operator to force the chain into the wood. This makes the job easier and reduces wear on the saw and chain.

The depth gauge setting determines how big of a bite the cutter takes ("**2-3**"). It is imperative that the depth gauge is set below the leading edge of the top plate by the proper amount so that the cutter can move into the wood.

If the depth gauge is too high or too low, it will prevent the cutter from pivoting forward and self-feeding into the wood. Refer to **Depth Gauge Setting** on **Page 28** for additional information.

Also important is the amount of the clearance angle. The downward slope of the top plate enables the cutter to move into the wood ("**2**") and then forces it out again ("**3-4**") to complete the cut.

Always use the chain manufacturer's specifications for the cutter specifications when sharpening the chain.

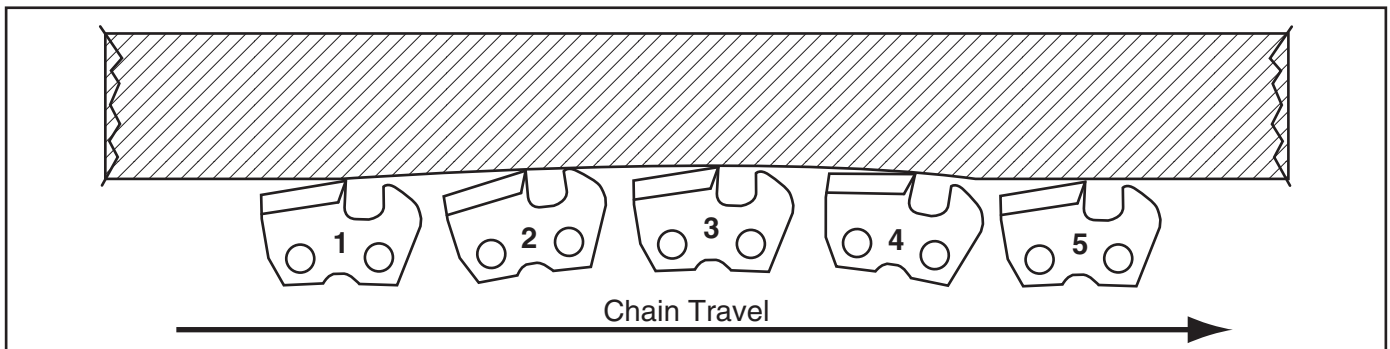


Figure 21. The rocking self-feeding motion of the cutter link during a cutting operation.



Grinding Wheel Selection

The grinding wheels supplied with the T23108 are specific to this sharpener. Refer to the specifications below when purchasing replacements.

Diameter5³/₄"
 Bore⁷/₈"
 Grit 60
 1/8" Thick Wheel Part Number T23251
 3/16" Thick Wheel Part Number T23250
 1/4" Thick Wheel Part Number..... T23249

To order replacement grinding wheels, contact Customer Service at (800) 523-4777 or go to www.grizzly.com.

Use the chart in **Figure 22** as a general guide when selecting the proper grinding wheel for your chain saw. However, we recommend that you always refer to the chain manufacturer's specifications when setting up the sharpener.

⚠ WARNING

Grinding wheels that break apart during operation can send high-speed debris at the operator or bystanders. **ALWAYS** visually inspect the grinding wheel and perform the ring test (see *Wheel Inspection & Ring Test* on the next page for detailed instructions) before mounting the wheel onto the sharpener. If there is visual damage or the wheel does not pass the ring test—**DO NOT** use it!


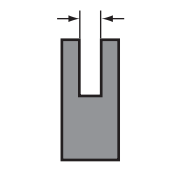
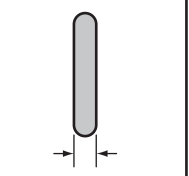
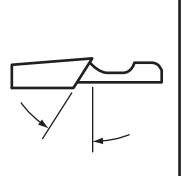
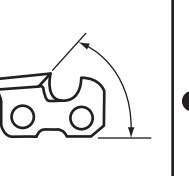
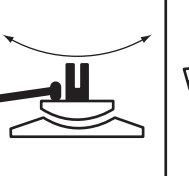
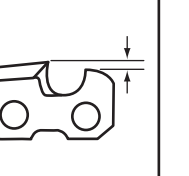
						
Chain Pitch	Chain Gauge	Wheel Thickness	Top Plate & Chain Holder Angle	Top Plate Cutting Angle/Wheel Tilt	Gullet Angle/Chain Holder Tilt	Depth Gauge
1/4"	0.050"	1/8"	30°	60°	10°	0.025"
0.325"	0.050"	1/8"	25°	60°	10°	0.025"
0.325"	0.058"	1/8"	25°	60°	10°	0.025"
0.325"	0.063"	1/8"	25°	60°	10°	0.025"
3/8"	0.050"	1/8"	25°	60°	10°	0.025"
3/8"	0.058"	1/8"	25°	60°	10°	0.025"
3/8"	0.063"	1/8"	25°	60°	10°	0.025"
0.404"	0.058"	3/16"	25°	60°	10°	0.025"
0.404"	0.063"	3/16"	25°	60°	10°	0.025"
0.404"	0.080"	3/16"	35°	60°	10°	0.050"
3/4"	0.122"	1/4"	35°	60°	10°	0.070"

Figure 22. Typical chain saw sharpening specifications.



Wheel Inspection & Ring Test

Do not assume that a grinding wheel is in sound condition just because it is new or looks okay. Often damage can occur in shipping, with age, or with exposure to moisture, and may not be visible. Inspect every wheel for damage before installation.

First, do a visual inspection. Look for any cracks, chips, nicks or dents in the surface of the wheel. If you see any of these, DO NOT use the wheel.

Second, do a ring test. This test will give you an indication of any internal damage that may not be obvious during a visual inspection. If the wheel does not pass the ring test, DO NOT use the wheel.

To perform a ring test:

1. Make sure the wheel that you test is clean and dry—otherwise, you may get false results.
2. If size permits, balance the wheel with your finger in the center hole. If this is not possible, hang the wheel in the air with a piece of cord or string looped through the bore.

3. At the four spots on the wheel shown in **Figure 23**, gently tap the wheel with a non-metallic object, such as a screwdriver handle or wooden mallet.

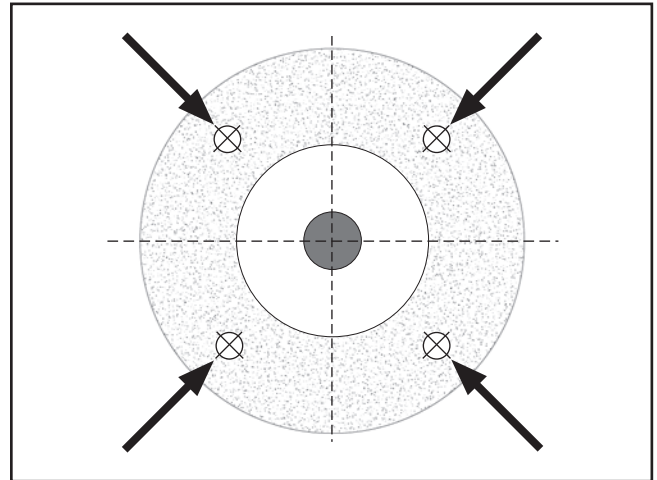


Figure 23. Tapping locations for a ring test.

4. An undamaged wheel will emit a clear metallic ring or “ping” sound in each of the four spots. A damaged wheel will respond with a dull thud that has no clear tone.

—If you determine from the results of the ring test that the wheel is damaged, DO NOT USE IT!



Top Plate Angle

It is necessary to have the correct backward top plate angle from the side plate (see **Figure 24**) to form the cutting point where the top and side plates meet, which initiates the cut. This angle continues the cut and forces wood chips away from the kerf.

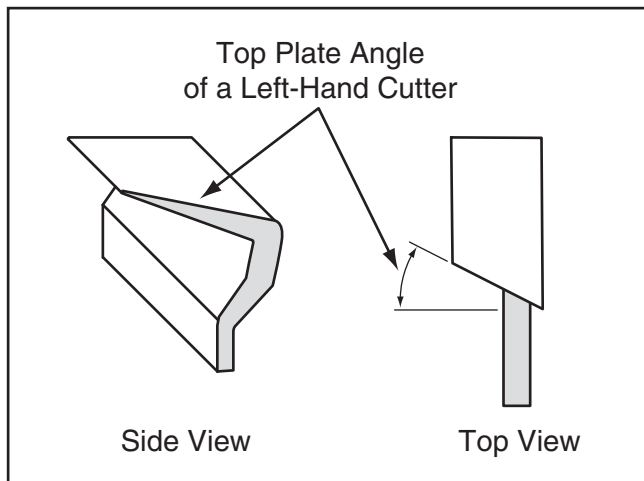


Figure 24. Top plate angle of a left-hand cutter.

When setting up the sharpener, the top plate angle is determined by the rotational angle of the chain holder in relation to the grinding wheel.

The chain holder angle scale on the front of the base (see **Figure 25**) has angle marks to the left and right of 0°. The angle marks on the *right* side of the scale are used when sharpening *left-hand* cutters (see **Left- & Right-Hand Cutters on Page 18**). Conversely, the angle marks on the *left* side of the scale are used when sharpening *right-hand* cutters.

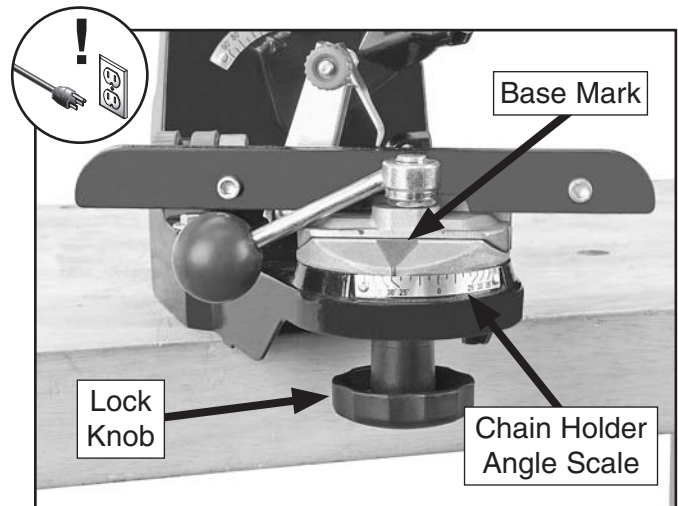


Figure 25. Chain holder angle scale.

Note: Always refer to the chain manufacturer's specifications when setting up the sharpener. However, if this information is not available, use the chart in **Figure 22 on Page 20** as a general guide.

To set up the chain holder for the top plate angle:

1. DISCONNECT MACHINE FROM POWER!
2. Loosen the chain holder lock knob.
3. Rotate the chain holder to align the mark on the chain holder base with the angle mark on that scale that is right for your chain, then re-tighten the lock knob.

Tip: The chain holder is easier to rotate if the holder tilt is at 0° (see **Gullet Angle on Page 24** for detailed instructions).



Top Plate Cutting Angle

The top plate cutting angle (see **Figure 26**) is a angle on the top plate underside that usually is ground at 60°. The combination of this cutting angle and the top plate angle serves to continue the cut and remove wood chips from the kerf.

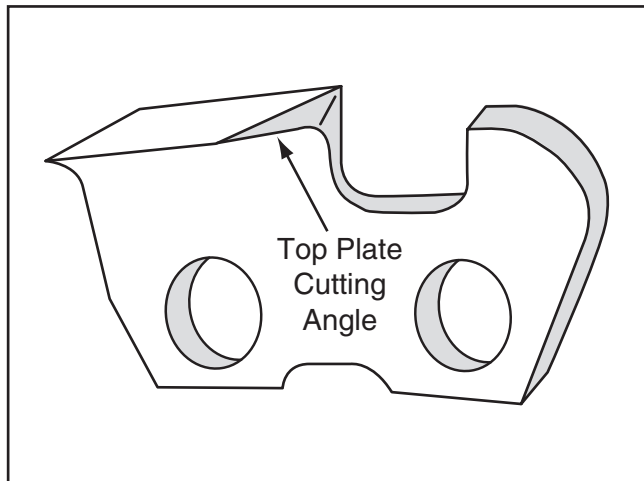


Figure 26. Top plate cutting angle.

When setting up the sharpener, the top plate cutting angle is determined by the tilt of the grinding wheel. The grinding wheel tilt is adjusted by changing the angle of the swing arm.

Note: Always refer to the chain manufacturer's specifications when setting up the sharpener. However, if this information is not available, use the chart in **Figure 22** on **Page 20** as a general guide.

To set the grinding wheel tilt for the top plate cutting angle:

1. DISCONNECT MACHINE FROM POWER!
2. Loosen the swing arm lock knob (see **Figure 27**).

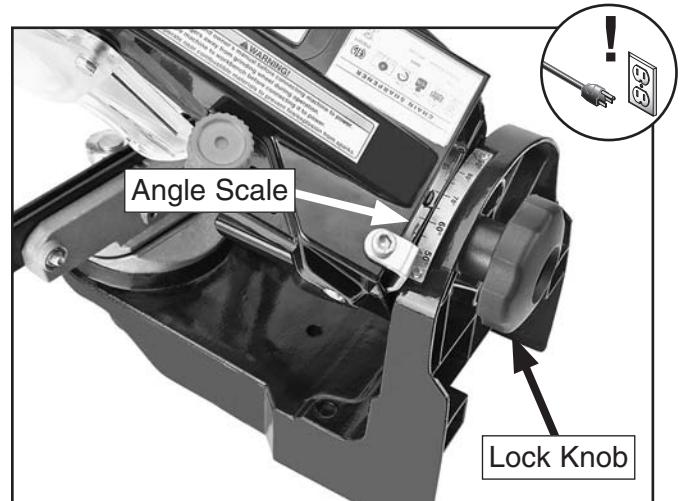


Figure 27. Swing arm angle scale and lock knob.

3. Reference the angle scale on top of the base vertical face to adjust the swing arm and grinding wheel to the correct angle for your chain, then retighten the lock knob.

The grinding wheel tilt setting stays the same when sharpening both left- and right-hand cutters.

Note: There is also the same angle scale on the inside vertical face of the base.



Gullet Angle

On most chains, the bottom edge of the cutter gullet must have a 10° downward angle from the outside to the inside of the cutter link, as shown in **Figure 28**. This angle forces wood chips into the path of the top plate for removal.

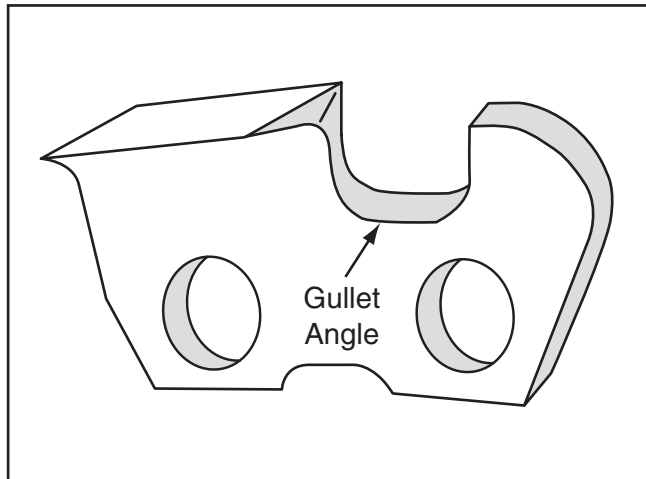


Figure 28. Location of the cutter gullet angle.

The gullet angle is determined by the tilt of the chain holder. The chain holder can be tilted to 0° or 10° in and out.

Note: Always refer to the chain manufacturer's specifications when setting up the sharpener. However, if this information is not available, use the chart in **Figure 22** on **Page 20** as a general guide.

If your chain requires a 10° gullet angle, align the outside casting tilt mark with the base mark when sharpening right-hand cutters (see **Figures 29–30**). Conversely, align the inside casting tilt mark with the base mark when sharpening left-hand cutters.

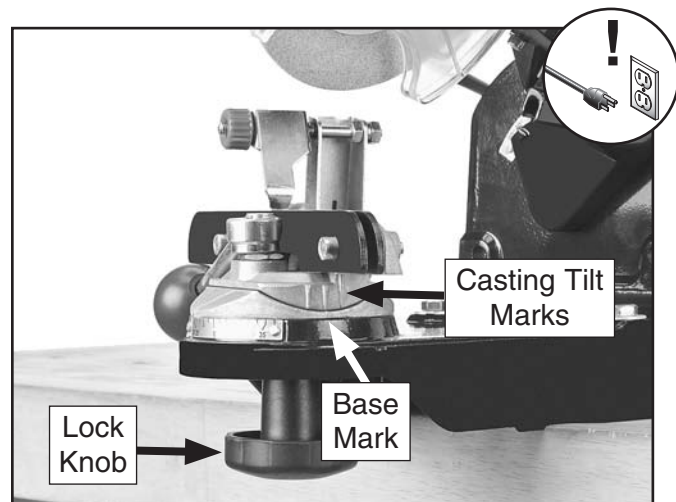


Figure 29. Aligning the chain holder tilt marks.

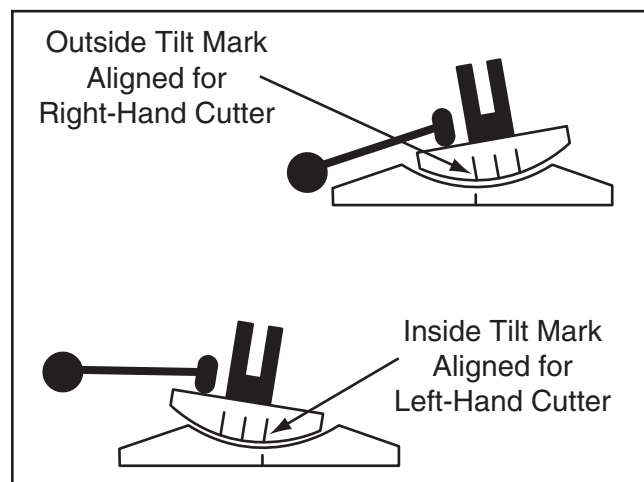


Figure 30. Chain holder tilt marks aligned for left- and right-hand cutters.

To tilt the chain holder for a 10° gullet angle:

1. DISCONNECT MACHINE FROM POWER!
2. Loosen the chain holder lock knob (see **Figure 29**) three or four rotations.
3. Tilt the chain holder so that the correct casting tilt mark aligns with the base mark, as illustrated in **Figure 30**. This will produce a 10° gullet angle when sharpening.
4. Retighten the lock knob, then check to make sure the tilt marks are properly aligned.
5. To bring the chain holder back to 0°, align the casting center tilt mark with the base mark.



Sharpening Operation

In the following sharpening procedure, you adjust the sharpener settings to grind the correct angles for the chain, then sharpen each cutter link one at a time.

After properly sharpening all of the cutter links, you need to check, and if necessary, adjust the depth gauge setting—the distance between the top plate leading edge and the top of the depth gauge. Even though the cutter may be properly sharpened, if the depth gauge setting is not correct, the chain will not effectively cut the wood.

The T23108 is not designed to adjust the depth gauge setting, and it is beyond the scope of this manual to explain the many methods to perform this important task (refer to **Depth Gauge Setting** on **Page 28** for additional information).

To sharpen the chain cutters:

1. Clean the chain with a non-flammable cleaner to remove any oil, dirt, and grime, then use compressed air to thoroughly dry the chain.
2. Visually inspect the chain and replace any severely damaged links that could break apart during sharpening. If replacement is not possible, use a different chain.
3. Make sure all of the cutter top plates will be at least $\frac{1}{4}$ " in length after the sharpening procedure is completed. This is the recommended minimum top plate length to avoid the cutter link from breaking apart during cutting operation.

—If you suspect that any cutter top plate will be shorter than $\frac{1}{4}$ " in length after being sharpened, replace that link or replace the chain.

4. DISCONNECT MACHINE FROM POWER!
5. Read and understand all the safety instructions listed in the beginning of this manual and included with the chain saw owner's manual.
6. Make sure the sharpener is firmly secured to the workbench.
7. Select and test the grinding wheel that is right for your chain, as instructed in the **Wheel Inspection & Ring Test** procedure on **Page 21**.
8. After successful completion of **Step 7**, install the grinding wheel onto the sharpener, as instructed in the **Installing Grinding Wheel** procedure on **Page 14**.

NOTICE

Always refer to the chain manufacturer's specifications when setting up the sharpener. However, if this information is not available, use the chart in *Figure 22* on **Page 20** as a general guide.

Note: *The following instructions begin by sharpening the right-hand cutters. If you choose to start with left-hand cutters, keep in mind the chain holder rotation angle and, if used, chain holder tilt will be different.*

9. Rotate the chain holder counterclockwise (looking down on it) and align it with the correct rotation angle mark on the scale for the chain, as instructed in the **Top Plate Angle** procedure on **Page 22**. This setting determines the top plate angle.
10. If required for your chain, set the grinding wheel tilt to provide the correct gullet angle, as instructed in the **Gullet Angle** procedure on **Page 24**.



⚠️ WARNING

If the grinding wheel should break apart during operation, the only thing between you and the flying debris of the wheel are the wheel and arbor safety guards. **ALWAYS** make sure the wheel and arbor safety guards are properly secured in place before connecting the machine to power!

11. Use the clamp lever (see **Figure 31**) to set the gap between the clamp plates to match the chain gauge, which will allow the chain to easily move along the top of the clamping bars in the same manner it moves along the chain saw bar.

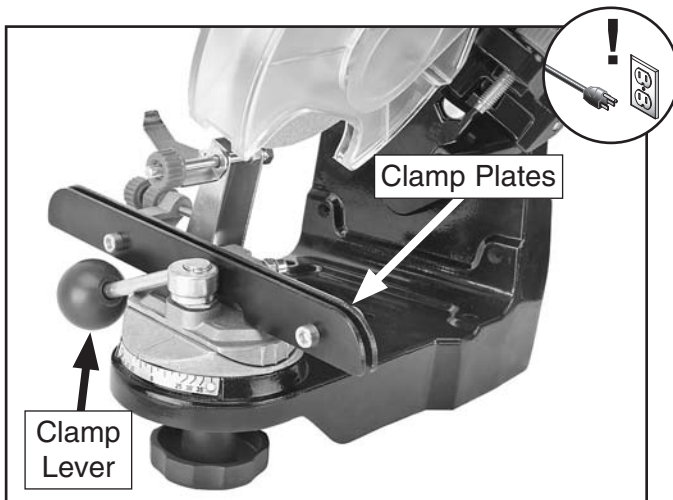


Figure 31. Clamp lever and clamp plates.

12. Locate the cutter link with the shortest top plate length and position the chain so that this link is under the grinding wheel. This will be the first link sharpened.

Use chalk or a marker to note the first link to be sharpened so that you will know when you are finished with that side of cutters.

Note: *If all of the top plates are approximately the same length, then start with any cutter. The concern is that all top plates are the same length when the sharpening operation is complete to ensure they cut away the same amount during operation.*

13. Position the edge of the advancement guide behind the cutter to be sharpened, then pull the chain to the left until the guide catches and stops the chain (see **Figure 32**).

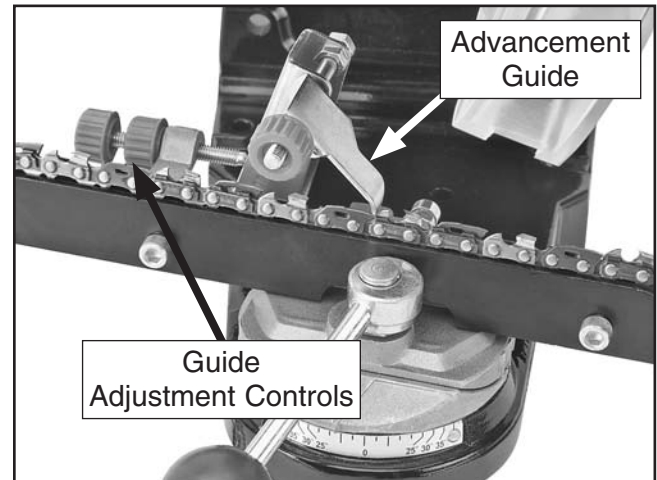


Figure 32. Advancement guide and controls.

Note: *Attaining the proper setting for the advancement guide is a matter of patience and trial-and-error. This setting is critical to properly sharpen the cutters, so take the time to find the correct setting.*

The goal is to position the cutter in relation to the grinding wheel so that all three angles—the top plate angle, the top plate cutting angle, and the gullet angle—will be correctly sharpened.

14. With the machine still disconnected from power, lower the grinding wheel into the gullet.

—If the wheel matches the gullet profile and is against the top and side plates when completely lowered, the advancement guide is properly set for now. Tighten the knob lock nut on the adjustment controls behind the guide to secure the setting.

—If the wheel hits the top plate or depth gauge and does not completely lower into the gullet, or it is not against the top and side plates, adjust the advancement guide until it successfully stops the chain in the proper position. Be sure to secure the setting by tightening the knob lock nut.



15. Rotate the clamp lever to the right to firmly secure the chain between the clamp plates of the chain holder.
16. Lower the grinding wheel into the cutter gullet until it stops, then thread the depth knob bolt down until it is against the depth stop (see **Figure 33**).

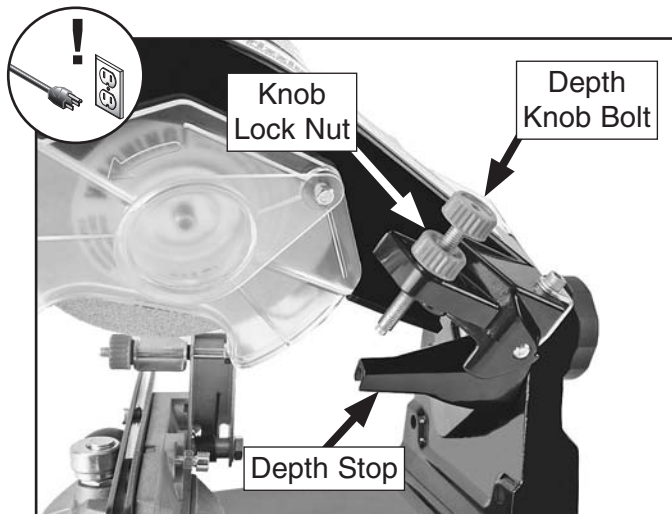


Figure 33. Depth stop and controls.

Important: *When adjusting the depth knob bolt, keep in mind that you want to replace and sharpen angles that may be worn or damaged. Do not make the gullet any deeper than is necessary to accomplish this.*

Also, taking deep cuts with the grinding wheel could burn the metal, which will damage the temper of the steel. Chain cutters that are heated excessively during sharpening become brittle and dull quickly.

It is better to make a few light passes than one deep one!

17. Back the depth knob bolt away from the depth stop by a small amount, then thread the knob lock nut down to secure the setting.
18. Adjust the advancement guide so that the chain moves slightly to the right. This will remove a small amount from the top and side plates and provide the sharpened angles.

Note: *This critical adjustment is a matter of trial-and-error and experience.*

19. Connect the sharpener to power and wait for the wheel to come to full speed.

20. Using a slow and steady pace, lower the grinding wheel into the first cutter link until the depth bolt hits against the depth stop, then allow the spring-loaded swing arm to raise the grinding wheel slowly.
21. While taking care not to contact the spinning grinding wheel with your hands or the chain, rotate the clamp lever to the left enough to release the chain from the clamp plates.
22. Slowly pull the chain to the right until the advancement guide falls behind the next cutter link for that side, then pull the chain to the left to firmly seat the advancement guide against the rear of the cutter link to be sharpened. This will properly position the link for sharpening.
23. Re-tighten the clamp lever and repeat **Steps 19–22** until all cutters for that side of the chain have been sharpened.
24. Turn the sharpener **OFF** and wait for the grinding wheel to completely stop, then disconnect the sharpener from power.
25. Release the chain from the clamp plates, turn it around 180° so that the cutters on the other side of the chain are ready for sharpening.
26. Rotate the chain holder to align with the angle marks on the other side of the rotation scale, and, if the chain requires a gullet angle, tilt the chain holder 10° in the opposite direction.
27. When you are satisfied that the sharpener settings are correct, repeat **Steps 18–23** for the rest of the cutters on that side of the chain.
28. Check, and if necessary, adjust the height of the depth gauges. Refer to the next subsection for more information.
29. Clean and lubricate the chain per the manufacturer's recommendation before re-installing it onto the chain saw.



Depth Gauge Setting

As explained in **How the Chain Cuts** on **Page 19**, the depth gauge of the cutter link forces the cutter to pivot forward and self-feed into the wood.

The depth gauge setting is the difference in height between the top plate leading edge and the top of the depth gauge. If this setting (see **Figure 34**) is too high or too low, the cutter will not properly pivot and self-feed into the wood.

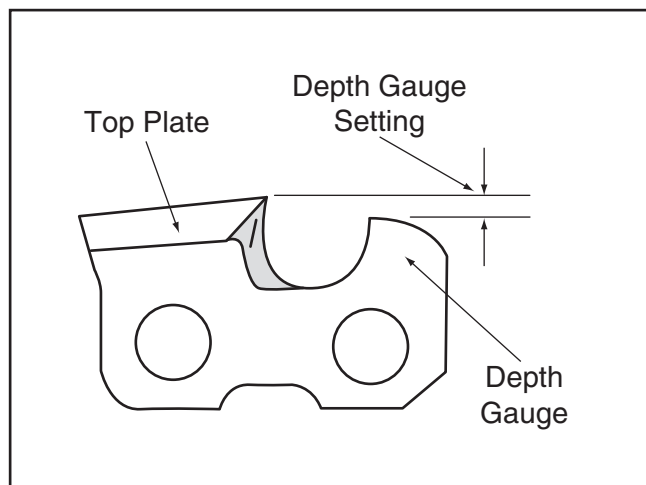


Figure 34. Depth gauge setting.

Adjusting the depth gauge setting requires the top of the depth gauge is made lower than the top plate leading edge by a specific amount. This amount changes as the top plate leading edge is ground back with successive sharpenings.

It is beyond the scope of this manual to present the many different methods of maintaining the proper depth gauge setting. However, it is important to state that properly maintaining this setting is critical to the efficient operation of the chain saw. No matter how well the chain is sharpened, if the depth gauge setting is not properly maintained, the chain will not be able to efficiently cut the wood.

We strongly recommend that you research the many methods and tools for maintaining the proper depth gauge setting for your chain, and choose the best solution that works for you.

Clamp Plate Adjustment

If necessary, the pressure of the chain holder clamp plates can be adjusted to suit your needs.

To adjust the clamp plate pressure:

1. DISCONNECT MACHINE FROM POWER!
2. Loosen the two cap screws shown in **Figure 35**. This will allow the inner clamp plate to be adjusted in the next step.

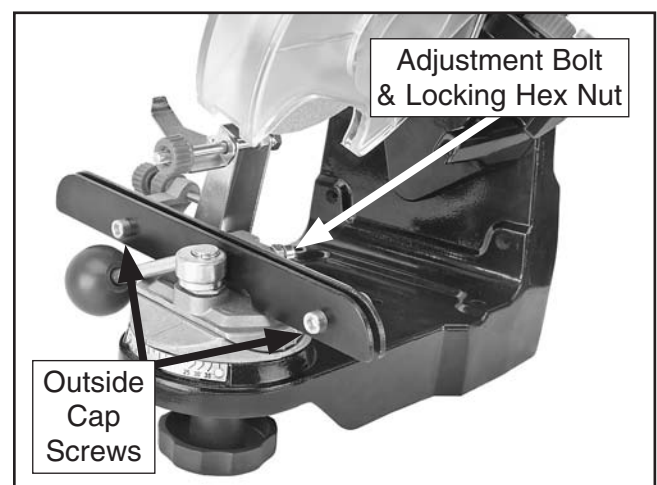


Figure 35. Clamp plate components.

3. Loosen the locking hex nut on the adjustment bolt, then thread the bolt in to force the inner clamp toward the outer clamp.
4. Re-tighten the locking hex nut and the two outside cap screws.
5. Test the clamping pressure of the plates with your chain, and if necessary, repeat this procedure until the clamping pressure is right for your chain.



SECTION 5: MAINTENANCE



Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily Check:

- Loose mounting bolts.
- Damaged or worn grinding wheel.
- Loose lock knobs and bolts.
- Worn or damaged wires or switch.
- Any other unsafe condition.

Cleaning

Cleaning the Model T23108 is relatively easy. Disconnect the machine from power and wipe down the surfaces with a damp shop rag, then dry them with a clean, dry cloth.

Lubrication

There are not any parts on this sharpener that require lubrication by the end user.

The bearings of the sharpener motor were lubricated and permanently sealed at the factory and do not need any further attention unless they need replacement.

Dressing Wheels

The edge profile and surface condition of the grinding wheel (see **Figure 36**) is critical in maintaining the proper shape of the top plate, side plate, and gullet when sharpening.

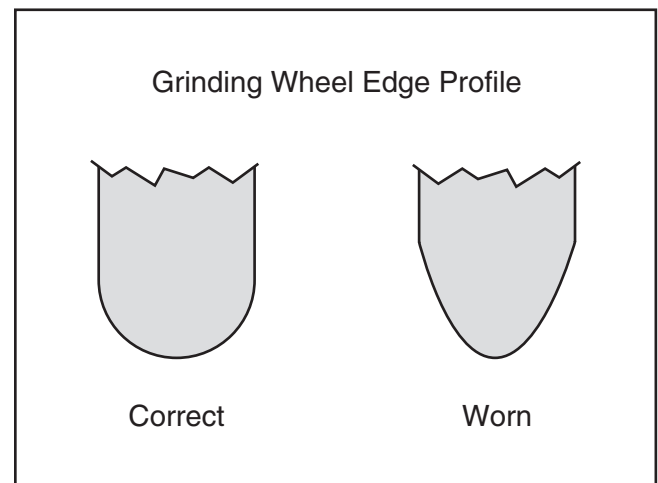


Figure 36. Grinding wheel edge profile.

With use, the abrasive surface of the grinding wheel becomes embedded with material from the chain, which reduces its effectiveness. In addition, the side and bottom edge deform and fails to effectively sharpen the cutter edges. When this happens, the sharpened surfaces become burned or discolored, instead of having a clean, silver finish. Additionally, the angles will not be properly sharpened.

Use the included wheel dressing block to expose a new abrasive surface on the wheel and to reform the side and edge profiles.



SECTION 6: SERVICE

Review the troubleshooting and procedures in this section to fix or adjust your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting



Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Power supply switched OFF or at fault. 2. Plug/receptacle at fault/wired wrong. 3. Start capacitor at fault. 4. Wall circuit breaker tripped. 5. Wiring open/has high resistance. 6. Motor ON/OFF switch at fault. 7. Motor connection wired wrong. 8. Motor at fault. 	<ol style="list-style-type: none"> 1. Ensure power supply is ON/has correct voltage. 2. Test for good contacts; correct the wiring. 3. Test/replace if faulty. 4. Ensure circuit size is correct/replace weak breaker. 5. Check/fix broken, disconnected, or corroded wires. 6. Replace switch. 7. Correct motor wiring connections. 8. Test/repair/replace.
Machine stalls or is overloaded.	<ol style="list-style-type: none"> 1. Motor wired incorrectly. 2. Plug/receptacle at fault. 3. Motor bearings at fault. 4. Operation overloading motor. 5. Motor overheated. 6. Motor at fault. 	<ol style="list-style-type: none"> 1. Wire motor correctly. 2. Test for good contacts/correct wiring. 3. Test/repair/replace. 4. Dress grinding wheel or replace it; reduce the feed rate; make sure sharpener settings are correct for the chain. 5. Clean motor, let cool, and reduce workload. 6. Test/repair/replace.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> 1. Motor or component loose. 2. Grinding wheel at fault/arbor hole not round. 3. Incorrectly mounted to workbench. 4. Motor fan rubbing on fan cover. 5. Motor bearings at fault. 6. Motor shaft bent. 	<ol style="list-style-type: none"> 1. Inspect/replace damaged bolts/nuts, and re-tighten with thread locking fluid. 2. Inspect/dress/replace grinding wheel. 3. Tighten mounting hardware; use shims if necessary. 4. Fix/replace fan cover; replace loose/damaged fan. 5. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 6. Test with dial indicator and replace motor.
Cutter edges burned or discolored; not being properly sharpened.	<ol style="list-style-type: none"> 1. Not using correct grinding wheel. 2. Sharpener settings not correct. 3. User placing grinding wheel against cutter too long or too hard during sharpening operation. 	<ol style="list-style-type: none"> 1. Use the correct size and grit grinding wheel; inspect, and if necessary, dress or replace wheel. 2. Make sure the sharpener settings are correct for the chain. 3. Raise the grinding wheel away from the cutter as soon as the depth bolt hits the depth stop.
Chain saw not cutting or self-feeding.	<ol style="list-style-type: none"> 1. Sharpener settings not correct. 2. Depth gauge settings not correct. 3. Chain dulls quickly. 	<ol style="list-style-type: none"> 1. Make sure the sharpener settings are correct for the chain. 2. Check and adjust the all depth gauge settings. 3. Cutter links over-heated during sharpening; replace links/chains.



SECTION 7: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Study this section carefully. If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine.

WARNING

Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved after-market parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.
















CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK 	BLUE 	YELLOW 	LIGHT BLUE 
WHITE 	BROWN 	YELLOW GREEN 	BLUE WHITE 
GREEN 	GRAY 	PURPLE 	TURQUOISE 
RED 	ORANGE 	PINK 	



T23108 Wiring Diagram

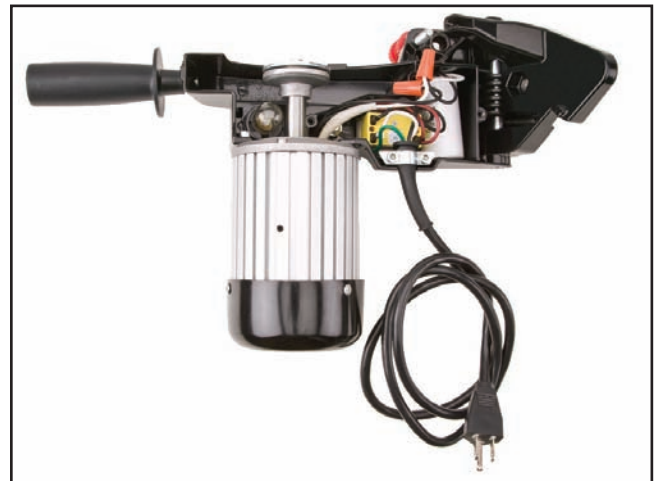
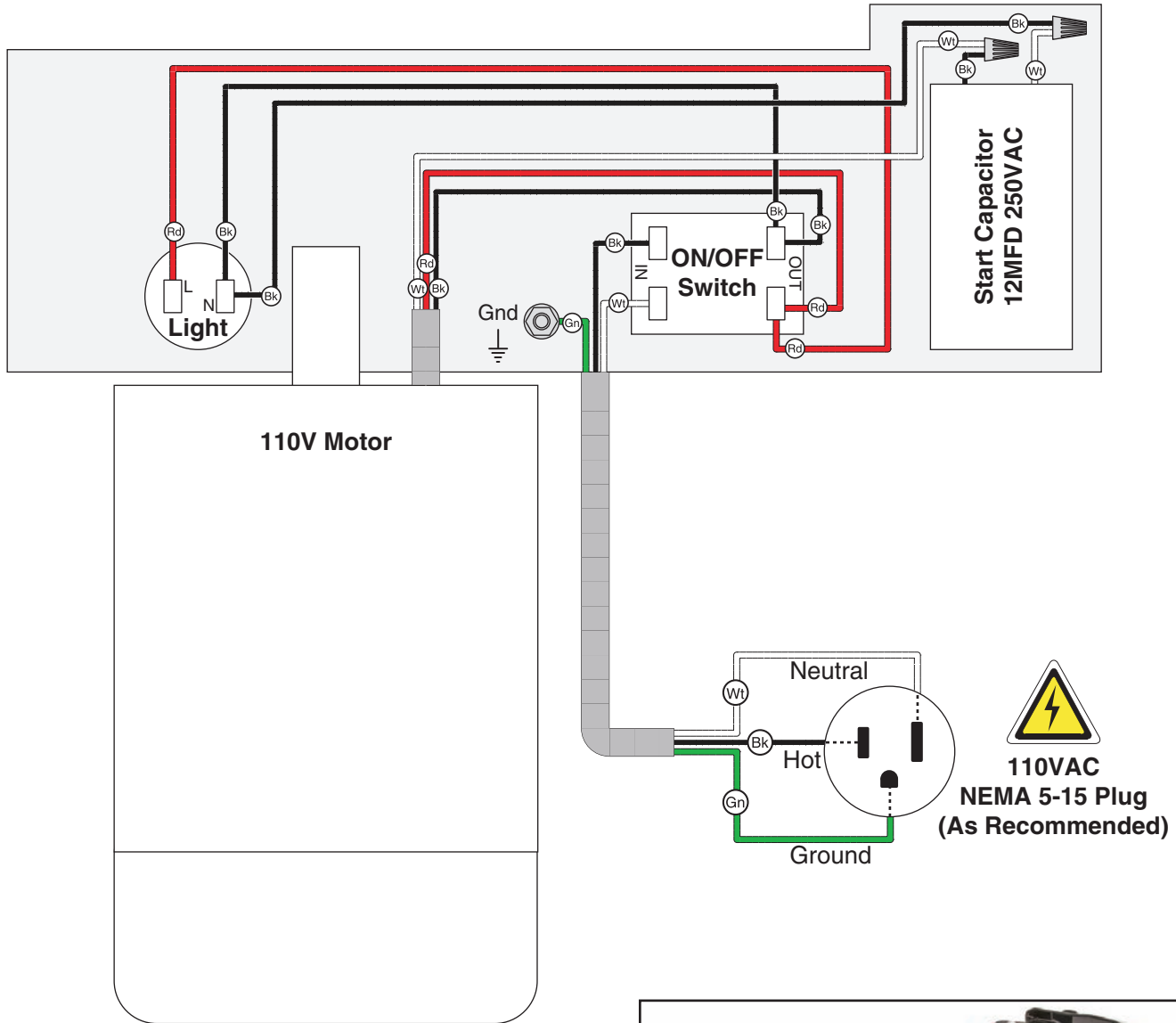
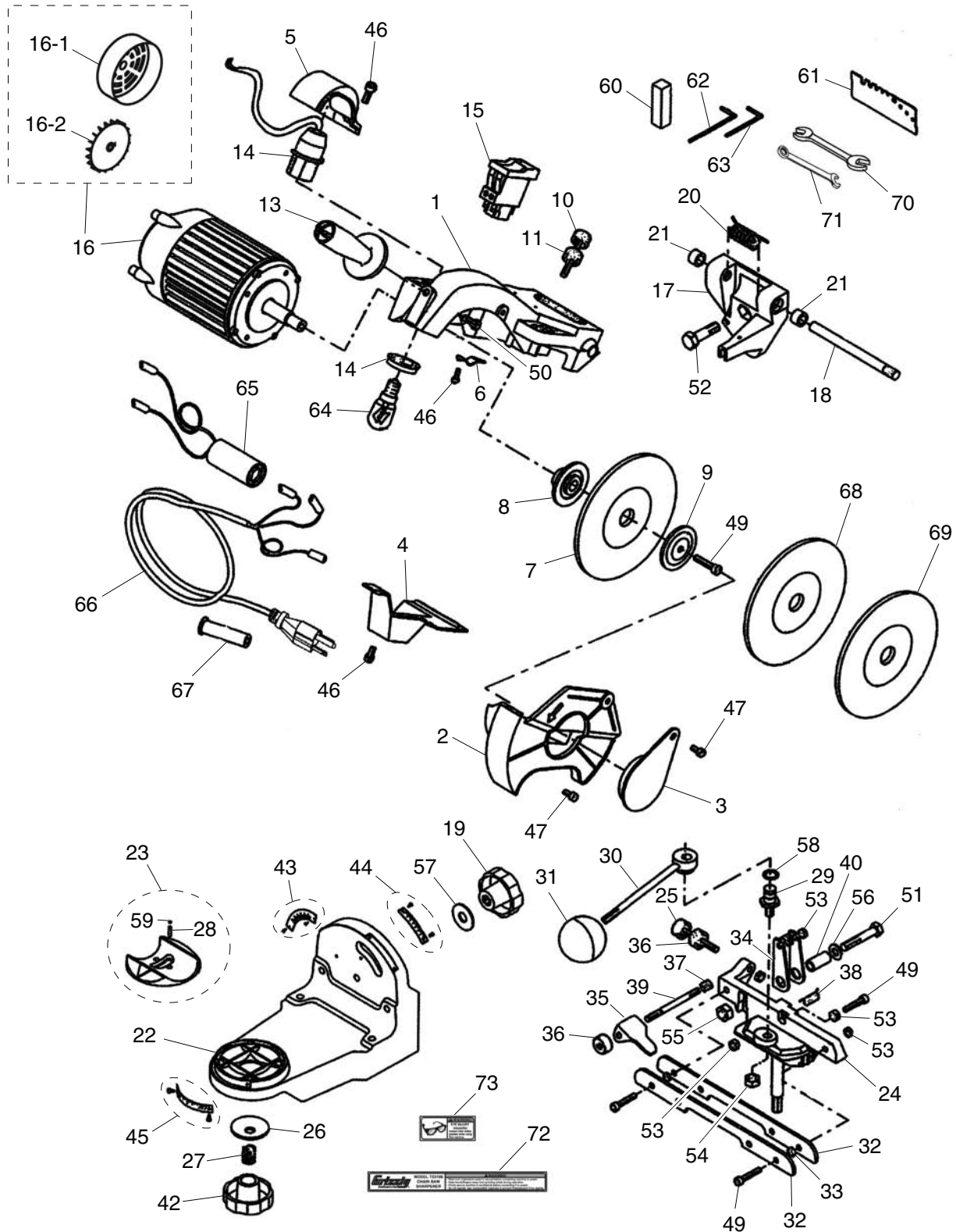


Figure 37. T23108 wiring.



SECTION 8: PARTS

Breakdown Diagram



Parts List

REF	PART #	DESCRIPTION
1	PT23108001	SWING ARM
2	PT23108002	WHEEL SAFETY GUARD
3	PT23108003	ARBOR SAFETY GUARD
4	PT23108004	WIRING COVER
5	PT23108005	LIGHT BRACKET
6	PT23108006	LIMITER
7	T23249	GRINDING WHEEL 7/8"B 60G 1/4" X 5-3/4"
8	PT23108008	INNER FLANGE
9	PT23108009	OUTER FLANGE
10	PT23108010	KNOB BOLT M8-1.25 X 70
11	PT23108011	KNOB LOCK NUT M8-1.25
13	PT23108013	SWING ARM HANDLE
14	PT23108014	LIGHT SOCKET ASSEMBLY
15	PT23108015	ON/OFF SWITCH
16	PT23108016	MOTOR 230W 110V 60HZ
16-1	PT23108016-1	MOTOR FAN COVER
16-2	PT23108016-2	MOTOR FAN
17	PT23108017	SWING ARM PIVOT BRACKET
18	PT23108018	PIVOT AXLE
19	PT23108019	KNOB M10-1.5
20	PT23108020	TORSION SPRING
21	PT23108021	BUSHING
22	PT23108022	BASE
23	PT23108023	CHAIN HOLDER BASE ASSEMBLY
24	PT23108024	CHAIN HOLDER CASTING
25	PT23108025	KNOB BOLT M6-1 X 50
26	PT23108026	CURVED WASHER 10MM
27	PT23108027	COMPRESSION SPRING
28	PT23108028	COMPRESSION SPRING
29	PT23108029	CHAIN CLAMP STUD
30	PT23108030	CHAIN CLAMP LEVER
31	PT23108031	KNOB M8-1.25
32	PT23108032	CHAIN CLAMP PLATE
33	PT23108033	COMPRESSION SPRING
34	PT23108034	ADVANCEMENT GUIDE BRACKET
35	PT23108035	ADVANCEMENT GUIDE

REF	PART #	DESCRIPTION
36	PT23108036	KNOB LOCK NUT M6-1
37	PT23108037	COMPRESSION SPRING
38	PT23108038	TORSION SPRING
39	PT23108039	DOUBLE END STUD M6-1 X 80
40	PT23108040	BOLT SLEEVE
42	PT23108042	KNOB M10-1.25
43	PT23108043	BOTTOM SWING ARM ANGLE SCALE
44	PT23108044	TOP SWING ARM ANGLE SCALE
45	PT23108045	CHAIN HOLDER ANGLE SCALE
46	PCAP50M	CAP SCREW M5-.8 X 10
47	PB96M	HEX BOLT M5-.8 X 10
49	PCAP07M	CAP SCREW M6-1 X 30
50	PCAP50M	CAP SCREW M5-.8 X 10
51	PB126M	HEX BOLT M8-1.25 X 40
52	PB31M	HEX BOLT M10-1.5 X 40
53	PN01M	HEX NUT M6-1
54	PN32M	HEX NUT M14-2
55	PN03M	HEX NUT M8-1.25
56	PW01M	FLAT WASHER 8MM
57	PWF10M	FENDER WASHER 10MM
58	PT23108058	THIN HEX NUT M14-2
59	PSTB004M	STEEL BALL 5MM
60	PT23108060	WHEEL DRESSING STONE
61	PT23108061	CHAIN GAUGE
62	PAW05M	HEX WRENCH 5MM
63	PAW04M	HEX WRENCH 4MM
64	PT23108064	LIGHT BULB 110V 15W
65	PT23108065	S CAPACITOR 12M 250V 1-1/4 X 2-1/2
66	PT23108066	POWER CORD 12AWG 3C 45" 5-15
67	PT23108067	STRAIN RELIEF
68	T23250	GRINDING WHEEL 7/8"B 60G 3/16" X 5-3/4"
69	T23251	GRINDING WHEEL 7/8"B 60G 1/8" X 5-3/4"
70	PWR810	COMBO WRENCH 8 X 10MM
71	PWR8	COMBO WRENCH 8MM
72	PT23108072	MACHINE ID LABEL
73	PT23108073	SAFETY GLASSES LABEL





WARRANTY CARD

Name _____
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 Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. **Of course, all information is strictly confidential.**

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 Card Deck Website Other:

2. Which of the following magazines do you subscribe to?

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<input type="checkbox"/> Family Handyman	<input type="checkbox"/> Popular Woodworking	<input type="checkbox"/> Woodshop News
<input type="checkbox"/> Hand Loader	<input type="checkbox"/> Precision Shooter	<input type="checkbox"/> Woodsmith
<input type="checkbox"/> Handy	<input type="checkbox"/> Projects in Metal	<input type="checkbox"/> Woodwork
<input type="checkbox"/> Home Shop Machinist	<input type="checkbox"/> RC Modeler	<input type="checkbox"/> Woodworker West
<input type="checkbox"/> Journal of Light Cont.	<input type="checkbox"/> Rifle	<input type="checkbox"/> Woodworker's Journal
<input type="checkbox"/> Live Steam	<input type="checkbox"/> Shop Notes	<input type="checkbox"/> Other:
<input type="checkbox"/> Model Airplane News	<input type="checkbox"/> Shotgun News	
<input type="checkbox"/> Old House Journal	<input type="checkbox"/> Today's Homeowner	
<input type="checkbox"/> Popular Mechanics	<input type="checkbox"/> Wood	

3. What is your annual household income?

\$20,000-\$29,000 \$30,000-\$39,000 \$40,000-\$49,000
 \$50,000-\$59,000 \$60,000-\$69,000 \$70,000+

4. What is your age group?

20-29 30-39 40-49
 50-59 60-69 70+

5. How long have you been a woodworker/metalworker?

0-2 Years 2-8 Years 8-20 Years 20+ Years

6. How many of your machines or tools are Grizzly?

0-2 3-5 6-9 10+

7. Do you think your machine represents a good value? Yes No

8. Would you recommend Grizzly Industrial to a friend? Yes No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?

Note: We never use names more than 3 times. Yes No

10. Comments: _____

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We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

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